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Stephen West's Fractional Currency Notes
of 1761from Henry W. Schab of
Annapolis, Maryland

(TN-122)

JUST IMPORTED,
*In the Dispatch; Capt. Taylor, from MADEIRA
and BARBADOS,*

A PARCEL of the best *Madeira* WINES,
Barbados RUM, SUGAR and LIMES,
to be Sold by the Subscriber, at his Stores on
Patuxent and *Patowmack*; where may also be had,
great Variety of *European* and *India* GOODS,
imported in the last Ships from *London*. Wholesale
or Retail, for Bills, Cash, Tobacco, Wheat, Corn,
and other Country Produce.

STEPHEN WEST.

I SOMETIME ago mentioned my Intention of
striking a Parcel of small Notes, from SIX
PENCE to HALF A CROWN each, to serve
as small Money in Exchange, for my own Con-
venience and that of my Neighbours, provided
no better Scheme was concluded on by the Gen-
tlemen in Business; and as the Want of such small
Money is notorious, I have therefore ventured to
Print a Number of such Notes, payable in Silver,
at the Rate of Seven Shillings and Six Pence per
Dollar, according to the following Specimen of
each Bill, any of which shall be paid off in Silver
on Demand, and the whole Notes called in, in
less than 3 Years from the Date. All those who
happen to be possessed of a Dollar's worth of these
Notes, may have them exchanged for Dollars, by
Mr. Robert Couden, and Mr. Nathan Hammond,
junior, of Annapolis, Merchants.—By my Store-
keepers, Mr. John Duwall at *Queen-Anne*, Mr.
Samuel Lane at *Pig-Point*, Mr. George Hardey at
Piscataway, Mr. Thomas Magruder at *George-Town*,
or at my own House in *Upper-Marlborough*. If
either the Legislature, or any Society of Gen-
tlemen, can or will contrive a sufficient Quantity of
small Money that will more effectually answer the
Purpose, I will instantly call in all mine.

STEPHEN WEST.

SIX - PENCE.

I STEPHEN WEST, of *Upper-Marl-*
borough in the Province of *Maryland*, Merchant,
do, by this INDENTED Printed BILL, No.
Promise and Oblige myself, my Heirs, Executors,
and Administrators, to pay the Bearer, upon De-
mand, in good SILVER COIN, the Sum of
SIX - PENCE, at the Rate of Seven Shillings
and Six-Pence per Spanish Dollar, for Value re-
ceived. Witness my Hand, this 23d Day of
June, 1761.

Witness.
Jonas Green,
Wm. Rind,

ONE SHILLING.

I Stephen West, of *Upper-Marl-*
borough in the Province of *MARYLAND*, Mer-
chant, do, by this INDENTED Printed BILL,
No. Promise and Oblige myself, my Heirs,
Executors, and Administrators, to pay the Bearer,
UPON DEMAND, in good Silver Coin, the Sum of
ONE SHILLING,
at the Rate of Seven Shillings & Six-pence per Spa-
nish Dollar, for Value received. WITNESS my
Hand, this 23d DAY of *JUNE*, 1761.

Witness.
Jonas Green,
William Rind,

**The 1761 Fractional Currency Notes of Stephen West,
of Upper-Marlborough, Maryland**

(TN-122)

from the *Maryland Gazette* of 27 August 1761

Submitted by Henry W. Schab; Annapolis, Maryland

These notes of Stephen West appeared in the 27 August 1761 issue of the *Maryland Gazette*. I like to call this the "Fractional Currency" of the mid-18th century. As far as I can ascertain no actual notes were ever printed for distribution. You will note that West's exchange rate was 7 shillings and Six Pence for one Spanish Dollar. The earliest indented note of Maryland (issue of 1 January 1767) promised 4 shillings and Six Pence for one Dollar! Interesting I think!

Editor's Comment: In his *Early Paper Money of America* (Page 130) Mr. Eric Newman notes the existence of small change promissory notes by a Nathan West and it is uncertain whether they are the same as these by Stephen West. West's statement in his advertisement that "I have therefore ventured to Print a Number of such Notes . . ." seems to suggest that the notes have already been printed and that West is now prepared to redeem them in silver in amounts of one dollar, or more, and especially since the specimen notes are dated 23 June 1761 which is two months prior to the *Maryland Gazette* date of 27 August 1761.

Eighteen-Pence.

I Stephen West, of Upper-Marlborough in the Province of MARYLAND, Merchant, do, by this **INDENTED Printed Bill, N^o.**

Promise & Oblige myself, my Heirs, Executors, and Administrators, to pay the Bearer, upon Demand, in good Silver Coin, the Sum of **ONE SHILLING and SIX-PENCE**, at the Rate of Seven Shillings and Six-pence per Spanish Dollar, for Value received. **WITNESS** my Hand, this 23^d Day of June, 1761.

WITNESS.

JONAS GREEN,
WM. RIND.

TWO SHILLINGS.

I Stephen West, of Upper-Marlborough in the Province of MARYLAND, Merchant, DO, by this Indented Printed BILL, N^o.

Promise and Oblige myself, my Heirs, Executors, and Administrators, to **PAY** the Bearer, upon Demand, in good SILVER COIN, the Sum of **TWO SHILLINGS**, at the Rate of Seven Shillings and Six-Pence, per Spanish Dollar, for **VALUE** Received. **Witness** my Hand, this 23^d Day of JUNE, 1761.

WITNESS.

JONAS GREEN,
WILLIAM RIND.

HALF a CROWN.

I STEPHEN WEST, of Upper-Marlborough in the Province of MARYLAND, Merchant, do, by this Indented Printed Bill, N^o. Promise and Oblige myself, my Heirs, Executors, and Administrators, to pay the Bearer, upon Demand, in good SILVER COIN, the Sum of **TWO SHILLINGS AND SIX PENCE**, at the rate of Seven Shillings and six pence per Spanish Dollar, for value received. **Witness** my Hand, this 23^d Day of June, 1761.

WITNESS.

JONAS GREEN,
WILLIAM RIND.

The original layout of these clippings from the *Maryland Gazette* was in a single column approximately 16 inches in length beginning with the heading shown on the preceding page and followed directly below by the Six-Pence and the One Shilling notes, then the Eighteen-Pence, the Two Shillings and the Half a Crown notes illustrated on this page.

In Memoriam

Edward R. Barnsley 1906-1989

Edward R. Barnsley, 83, fondly known to his friends as "Ned", died on May 10, 1989 at his home in Brant Beach, Long Beach Island, New Jersey. Long recognized as an authority on the Connecticut Coppers coinage, Ned's numismatic interests included the New Jersey and Machin's Mills issues, as well. His historical research into the use of an unapproved U. S. Treasury Seal on United States paper money resulted in the change of seals to a new official version in 1968.

A descendant of five Revolutionary patriots, Ned was born in Newtown, Bucks County, Pennsylvania on August 15, 1906. After attending public schools in Newtown, he graduated with a degree in geology from Penn State College. He served as a medical technician and chaplain's assistant during World War II, was appointed to the Pennsylvania Historical Commission for the rebuilding of Pennsbury Manor and was employed at Fairless Works of U. S. Steel Corporation until his retirement in 1959.

Mr. Barnsley was a member of many historical, patriotic and hereditary societies in his native county of Bucks and his adopted county of Ocean, NJ. Among his many works "Historic Newtown" has become the standard text on the history of the colonial seat of Bucks County, PA. His avid interest in local history resulted in his restoration in 1939 of the "Bird in Hand", one of the earliest frame buildings (1723) in Pennsylvania, thus beginning the renaissance of interest in Colonial Newtown.

Funeral services were held at 11 a.m. May 15 at Holy Innocents' Episcopal Church in Beach Haven, NJ. Interment was in the afternoon at the graveyard of St. Luke's Episcopal Church, Newtown, PA. He is survived by his wife of 46 years, Ruth, daughter Ann, sons Thomas & William, and five grandchildren.

Ned was a Patron and Benefactor of the Colonial Newsletter Foundation. He was also a member of the Historical Society of Pennsylvania, the Genealogical Society of Pennsylvania, the Library Company of Philadelphia, the Philadelphia Society of Sons of the Revolution, the Colonial Society of Pennsylvania, The Mayflower Society, the American Philosophical Society, the Long Beach Island Historical Society and the American Numismatic Association. He served as president of the Bucks County Historical Society and the Newton Library Company.

Research In Progress

New Jersey Biennial Dies

by

Michael Hodder

(TN-123)

This is a brief report on the current state of research into the biennial die pairings known in the New Jersey copper coinage of 1786-1788. There are a total of 11 biennial dies (reverses C, J, L, S, T, U, and b are known married to obverses dated 1786 and 1787, while f, g, r, and u are known mated with obverses dated 1787 and 1788); four of these, J, U, f, and g have been studied in depth thus far. Die emission sequences have been worked out for these, new attribution schemes offered, and observations made which are somewhat startling in light of prior research. The studies of reverses J and U will be published elsewhere; this is the first report of the findings on reverses f and g. [1]

Reverse J

Reverse J was married to ten obverses: 13, 14, 15, 16, 17, and 18 dated 1786; 34, 35, 36, and 37 dated 1787. Based upon the study of a sample of 121 coins, the die emission sequences, dating, and attributions now suggested for this family are as follows:

Die Emission Sequence-Reverse J

----- TIME ----->				
State I 1787-1788	State II 1787-1788/9	State III 1788-1790	State IV 1788-1790	State V 1788-1790
13-J (some)	----->13-J (most)	----->13-J (rest)		
14-J (most)	----->14-J (rest)			
	15-J (all)			
	16-J (1/3)	----->16-J (rest)		
		17-J (1/3)	----->17-J (some)	----->17-J (rest)
18-J (half)	----->18-J (some)	----->18-J (rest)		
34-J (some)	----->34-J (some)	----->34-J (most)		
			35-J (most)	----->35-J (rest)
			36-J (some)	----->36-J (some) ----->36-J (most)
			37-J (some)	----->37-J (few) ----->37-J (most)

The die emission sequence clearly shows that the entire J family was back-dated, some varieties by as much as two years. State I has been attributed to the Rahway Mint, struck by the Goadsby/Cox partnership or by Goadsby alone. State II has been attributed to Goadsby, Cox, or Matthias Ogden, either single, jointly, or in some form of loose partnership. States III through IV have been attributed to Ogden (later research has suggested in partnership with Cox), struck at Rahway. Evidence was found in the weights of some State III - V specimens for

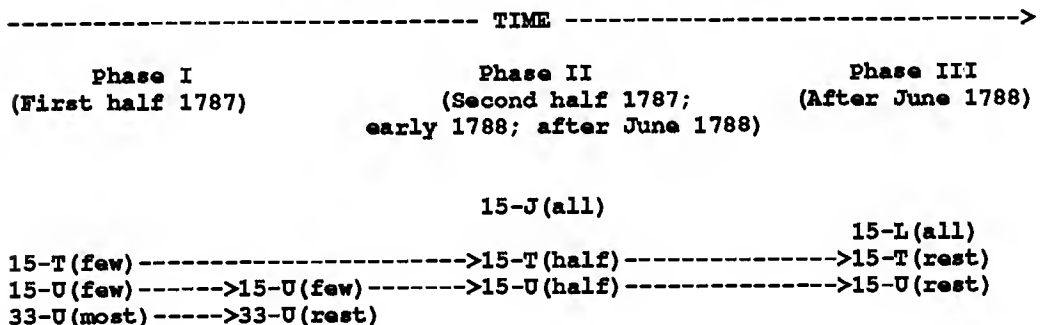
[1] The in-depth studies of reverses J and U will be published next year, the first in *American Numismatic Society Museum Notes*, the second in the American Numismatic Association's *Centennial Anthology*. Interested readers may await the appearances of these two, or may contact the author at Bowers and Merena.

a return to the statutory, 150 grains/piece, weight standard. This seems to have followed the decision of the New Jersey Chancery Court (June 7, 1788) to award custody of the Rahway operation to Matthias Ogden, with the understanding that he was to "perfect the [part of the] contract" originally awarded to Goadsby and Cox two years previously. It should be remembered that the contract bore a term of two years. The Rule of Reference of June 7, 1788 appears to have extended its term indefinitely, pending completion of the 2 million coppers that were the Goadsby/Cox portion.

Reverse U

Reverse U was married to two obverses, 15 and 33. Obverse 33 was not mated with any other reverse that we know of today; obverse 15 was in turn married to reverses J (see above), L, and T. Based upon a sample of 62 coins, the die emission sequences, dating, and attribution now suggested for this family are as follows:

Die Emission Sequence-Reverse U



The overwhelming majority of the 1786 dated reverse U combination was clearly back-dated, some by as much as two years. Combination 33-U appears to have been struck in the year its obverse proclaims, however. The die emission sequence for reverse U cannot be as nicely dated as reverse J's. The small number of 15-U and 33-U with an early stage of the reverse die cud are contemporaries, but whether they should fall into Phase I or II cannot be determined with precision. Phase I has been attributed to the original Goadsby/Cox partnership at Rahway. Phase II is very complex, and has been attributed to Rahway, under the direction of Goadsby, Cox, or Ogden. Whether they were working singly, in concert, or in loose partnerships of convenience cannot be known. Phase III has been attributed to Rahway and Ogden, most likely in concert with Cox, following the decision of the Chancery Court in June 1788.

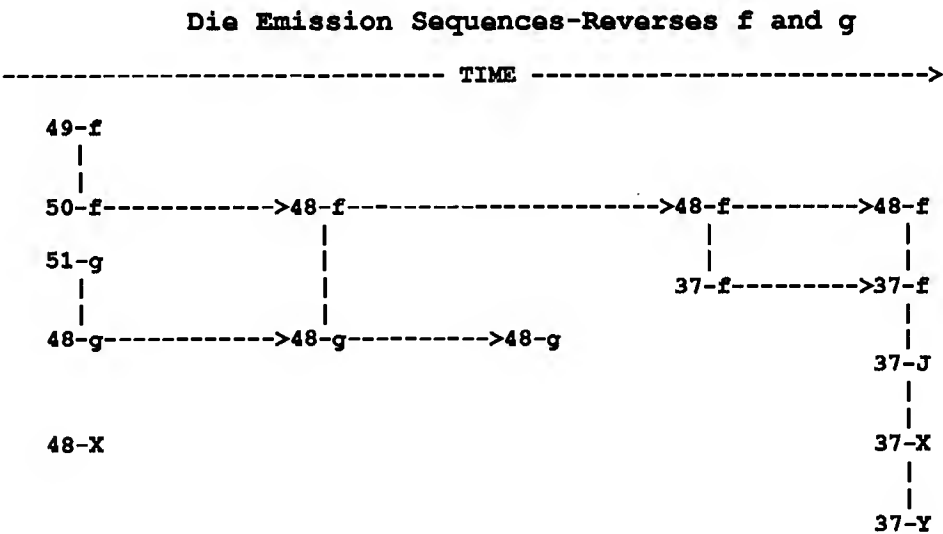
Analysis of the metrology of the later states of the obverse 15 family showed that these were struck to an improved, higher weight standard than found on the earlier states. This observation echoes the similar finding in the study of reverse J. The appearance of coins struck to the original statutory weight of 150 grains/piece was found in the same chronological range in both die families, namely, after June 1788, and seemed to be a phenomenon characteristic of coins struck at that time.

Reverses f and g

The prior two studies dealt only with coins dated 1786 or 1787. These two die families were chosen because their combinations bear dates of 1787 or 1788, and so their study might confirm the common observations made about the J and U families.

Reverse f was married to obverses 37 and 48 dated 1787, and to 49 and 50 dated 1788. The 1788 combinations are part of the Heads Left group, which has occasioned much speculation in the literature. Reverse g was also married to obverse 48, dated 1787, and to 51 dated 1788; obverse 51 is the third member of the Heads Left group. Second degree collateral members of these two die families include 37-J (see above), 37-X, 37-Y, and 48-X.

Based upon a sample size of 137 coins drawn from both families and collateral members, the die emission sequences are as follows:



In the schematic above, dotted lines ending in arrows represent progressively later die states of the same variety. Dotted lines without arrows represent identical states of the shared die.

It is immediately clear that the 1787 dated combinations are largely back- dated, since they are found in later states than 1788 dated ones that share a reverse die. Interestingly, the Heads Left group appears to have been struck before the majority of the other combinations with reverses f and g.

These two reverse dies are each found in three broadly different die states. Further, their combinations, and the collateral members', display metrological and mensural characteristics that are very striking. There is a marked, gradual progression in the families from small, light-weight flans to broad, lightweight ones, ending with broad, heavy weight planchets. Expressed schematically, this development can be shown to correlate nicely with the die emission sequences proposed above.

Die Emission Sequences-Reverses f and g
Adjusted for Observed Flan Diameter/Weight Progression

**Small & Light
Flans**

**Broad & Light
Flans**

**Broad & Heavy
Flans**

51-g (I)

48-g (I/II) ----->48-g (III)

49-f (I)

50-f (I) ----->48-f (II/III)

37-J ----->37-f (III)

37-X

37-Y

Dotted lines ending in arrows represent progressively later die states; dotted lines without arrows represent identical states of the shared die. Roman numerals represent major states of a reverse die, higher numbers standing for later states.

The earliest state of reverses f and g (State I) have been dated to the second half of 1787, early 1788, or after June 1788. This imprecision is reflected in their attributions, which cannot be more securely made than to say they were struck at Rahway by Goadsby, Cox, or Ogden acting singly, in concert, or in some loose alliance of convenience. They are, in other words, contemporaneous with Phase II of the reverse U coinage, and roughly contemporaneous with States II and III of the reverse J coinage. States II and III of reverses f and g are dated after June 1788 and attributed to Matthias Ogden, most likely in association with Albion Cox.

The Heads Left group does not appear to be as monolithic as previously thought, since there is a distinct difference in flan sizes and weights between 51-g on the one hand, struck on small, light flans, and 49-f and 50-f on the other, both of which were struck on broader, but still light-weight, planchets. Metrologically, 49-f and 50-f resemble no other member of the f and g families; while 51-g is similar to States I and II of 48-g, and 37-J. Stylistically, however, nothing distinguishes them from each other, yet the Heads Left type is a radical departure from the general type. It may not necessarily represent a reversal of the New Jersey arms, as usually believed, since the original description of the state's arms did not specify in which direction the

head should face, and dexter and sinister facing heads are found contemporaneously. The plough beneath the horse on the Heads Left type is both more realistic, and of heavier application, than the one usually appearing on the coinage.

The gradual progression towards heavier weight flans later in the lives of reverses f and g shown above confirms the evidence developed from the earlier studies of reverses J and U. Later studies, of the remaining New Jersey biennial dies that show progressive damages, should confirm this phenomenon. In the meantime, it appears that a "reform" of the coinage took place after the New Jersey Chancery Court decided to make Ogden trustee for the state's coinage. From the evidence seen thus far, Ogden seems to have made a good faith effort to fulfill his commission.

Further questions still remain unanswered, particularly the relationship between Goadsby and Cox from January to June, 1788 and Cox's relationship to Ogden after June of that year. Ogden's role in the coinage certainly needs re-evaluation: it may be that his proposal to Congress of March 23, 1787, in which he stated that he and his associates could be ready in a fortnight to begin coining if they were chosen for the Fugio contract, may refer to an early association with Goadsby and Cox in the New Jersey venture. It will be remembered that the first payment of seigniorage to the state of New Jersey was dated March 16 of that year. One very perplexing question still remaining arises from the records of Treasurer James Mott. According to his receipts, in June 1788 the Goadsby/Cox partnership was shy only some 10% of the total number of coppers they had contracted for. Yet the die emission sequences proposed above suggest that many varieties were coined after that date. It is difficult to believe that all of these were "illegal", particularly since the varieties studied thus far show a definite return to the legal weight for the coinage at that time. It is possible that these good weight varieties represent the coinage of the 32,000 blanks and the 60 ingots of copper found in Rahway on January 29, 1788, when Caleb Camp, the Essex High Sheriff, served Cox's Writ of Replevin. Further studies of the New Jersey biennial die pairings should shed some light on this matter.

The die emission sequences presented above have been securely established from the coins themselves. Additional specimens will, most likely, serve to refine rather than revise them. Mint attribution and dating schemes, however, are far more fluid, and at this stage of the research can only be taken as likely suggestions, not hard facts. No attribution or dating scheme thus far proposed is as firmly grounded on the numismatic and documentary evidence that exists as it should be. Much more work needs to be done. Nevertheless, the proposals I have offered are, I believe, as securely based as the present state of the art may allow.

Research efforts now underway include a thorough review of the 1786-1790 issues of the *New Jersey Journal* and the *Daily Mercury*, both published at Elizabethtown, as well as the 1786-1790 volumes *Votes and Proceedings of the New Jersey Assembly*. The remaining seven New Jersey biennial die pairings will be studied in the same fashion as before, leading ultimately to a reconstruction of the die emission sequences for almost all known die combinations. More specimens of New Jersey coins are being sought, to increase the size of the database I maintain, which now includes over 2,100 different specimens. The New Jersey state archives will be searched next year for all references to the coinage. I hope eventually to reconstruct the history of the coinage as well as it can be learned from all the surviving sources, numismatic and documentary.

"Corrections" Regarding Matthias Ogden, et al
from Gary A. Trudgen; Endwell, NY

(TN-124)

While compiling material over the past couple of years for my article on Matthias Ogden (CNL page 1032) I have discovered three errors concerning him that have been published earlier in CNL. These are:

Page 128: Matthias Ogden did not have a daughter named Francis, as stated on this page. However, he did have a son named Francis B. Ogden.

Page 494: Matthias Ogden's father was Robert Ogden, 2nd, not Moses Ogden as stated on this page. Moses Ogden was Matthias' uncle. Also, Francis Barber did not marry Nancy Ogden as stated. He married Anne Ogden, daughter of Moses Ogden. This error has been perpetuated from Hatfield's history.

Page 663: The 1840 sale of Colonel Ogden's property was actually that of Aaron Ogden, not Matthias Ogden as assumed in the write-up.

Editors note: These "corrections" will be indexed in conjunction with the original articles or notes with which they are associated in order to help avoid confusion in the future.



Discovery of a Second Connecticut 5.13-l of 1786
from James H. Goudge; Canoga Park, CA

(TN-125)

I am pleased to report the discovery of the second known Miller 1786 5.13-l. The coin was discovered on Thursday, September 8, 1988 on the bourse of The Greater New York Numismatic Convention by Chicago area collector Ed Sarrafian.

The coin was examined by this writer and noted Connecticut specialist Robert Martin who confirmed the discovery. The coin is now in the Goudge collection of Connecticut Coppers.

Editor's note: We hope to obtain a high quality photograph of this new discovery suitable for publication. The specimen appears to be very similar in condition to the ANS specimen. If any other specimens of 5.13-l of 1786 are known, please advise ye Editor.



Auction Appearances of Massachusetts Coppers

by
Mike Packard

(TN-126)

Part I

A few months ago, I received a letter from a fellow collector of Massachusetts copper who wanted to know which auction catalogues contained significant collections of Massachusetts coppers. I told him Bowers and Merena's Taylor and Norweb sales and NASCA's Kessler-Spangenberg were very significant, but while other catalogues had important individual or high grade pieces, I did not necessarily think they contained significant collections. Are there other auctions with important collections of Massachusetts coppers? I honestly did not know. I decided to look first through my own auction catalogue library. I own about three hundred auction catalogues (mostly Stacks from about 1960 to the mid 1970's and from 1983 forward and Bowers *et al* off and on [mostly on] from the late 1970's). I decided to look through each of them and record every offering of a Massachusetts copper. My records include the auction house, the date of the auction, the lot number, the variety if specified or if the coin was plated, whether the coin was plated, the stated grade, and the sales price if I had a prices realized list for that auction.

I recorded 1062 Massachusetts copper appearances in 186 different sales or fixed price lists that were issued through the end of 1988. Many of these appearances were in sales offering only one or two examples of Massachusetts copper. Few of the sales contained significant offerings. What makes a "significant" offering? A given number of pieces? A given number of varieties? A given average grade? A given number of high grade pieces? Or perhaps a given number of rare varieties? All these criteria are important and, fortunately, sales that are significant by one criterion are usually significant by others. I did not use the first criterion above because I do not feel the sale of a hoard of lower grade common varieties constitutes a significant event. I think an important sale of Massachusetts coppers is one that is relatively complete in the number of varieties offered. There are currently 45 varieties known to have been minted by Joshua Wetherle and his workmen at the mint in Boston (11 half cent varieties and 34 cent varieties). There are another 4 varieties (all cent varieties) that are generally accepted to be contemporary counterfeits. These varieties are usually collected as a part of the series (when they can be found). Thus, there are currently 49 known varieties of Massachusetts copper cents and half cents. If a collection has at least 50 percent (25) of the known varieties, I consider it significant, even if the coins are not of exceptionally high grade. I consider a collection 15 or more varieties to be significant if the pieces are generally of exceptional quality or if 3 or more varieties are R-5+ or scarcer by my rarity scale.

By my criteria, the following are the "significant" sales of Massachusetts copper coins among my catalogues. The numbers in parentheses are the number of half cent (HC) and cent (C) varieties contained in the sale.

1. Bowers and Merena's "Norweb". March 1988. (9 HC, 27 C).
2. Bowers and Merena's "Taylor". March 1987. (9 HC, 26 C).
3. NASCA's "Kessler-Spangenberg". April 1981. (9 HC, 22 C).
4. Stacks' June 1987. (7 HC, 22 C). Not choice, but nice runs of varieties in grouped lots.
5. Bowers and Merena's "Hewett". November 1984. (8 HC, 13 C). Several rarities including the very scarce 4-D 1787 half cent.
6. Bowers and Ruddy's "Garrett". November 1979. (7 HC, 11 C). Choice material.
7. Stack's "Picker". October 1984. (7 HC, 10 C). Quality with several rarities.

Stacks' "Massachusetts Historical Society" (October 1970) and New Netherlands' "Fifty-First" (June 1958) both had about 20 different varieties, but the grades were not outstanding and there were fewer than 3 true rarities. Mid-American's "FUN" (January 1987) had a beautiful set of 10 Massachusetts half cents in one lot, but not enough more to be significant.

If any CNL Patrons are aware of other sales containing significant collections of Massachusetts copper, please let me know. My address is 4905 Village Drive, Fairfax, VA 22030.

One collection that I think would have made a significant sale is the collection of Hillyer Ryder. I have never seen reference to a sale of his Massachusetts coppers although I do notice pieces with his pedigree for sale from time to time. Is anyone aware of the disposition of his collection of Massachusetts (and Vermont) coppers? Was it auctioned, sold intact, sold piece by piece, or given to a relative, friend, or institution? Any information any CNL member can provide would be welcomed.

Part II

After spending a fair number of hours recording each auction appearance of a Massachusetts copper from the auction catalogues and fixed price lists I own, I decided to play around with the data. I wanted to know if my rarity ratings seemed to hold up under this "newly available" data. I wanted to know which varieties seemed to be difficult to obtain in high grade (ie. EF or higher). And I wanted to duplicate James Spilman's quantity analysis of Massachusetts coppers (*Colonial Newsletter*, Issue 77). Spilman used my rarity values (which I produced by adapting rarity values obtained from Robert Vlack and Richard August) to estimate the mintage of cents and half cents in each of the 2 years of production.

As any good statistician will tell you, my sample is not particularly good for the purposes I intend. The sample was not randomly selected. That is, each existing Massachusetts copper did not have a equal probability of being sold in one of the sales for which I have a catalogue. Even if it were a random sample, it would only represent the currently existing population of Massachusetts coppers, not the original population.

There are several specific problems with this sample related to its nonrandom selection. First, lower grade coins are underrepresented. It is the nature of collectors to want nice, representative examples of the coins they collect in their collections. It is also the nature of auction companies to want to offer pleasing (higher grade) coins to their customers. There is a certain cost of cataloguing a sale and lower grade material, unless rare, often does not net the auction company a return equal to its cataloguing cost. If lower grade material must be accepted, it is usually grouped in multicoins lots to minimize cataloguing costs. Second, rare varieties are overrepresented. It is the nature of variety collectors to collect one coin of each variety. Generally when we upgrade a coin, we sell the duplicate. Common varieties are underrepresented in our collections relative to their availability in the market. This makes the rarer varieties overrepresented in our collections relative to their market availability. The more relatively complete collections sold at auction, the higher the relative overrepresentation of rare varieties. A third problem with my sample is that some coins appear in more than one sale. For the coins that I list as R-6 or higher, I eliminated duplicate appearances if the coin was plated in two or more sales or if the catalogue stated the coin was offered in another sale for which I had a catalogue. This was a tedious process and I did not perform it for the more common varieties. Finally, the attribution of Massachusetts coppers is a less than exact science. Some varieties are commonly confused (the 1788 8-C cent for the 11-C and the 1788 7-M and 15-M cents for the 9-M are often encountered examples). If a coin was plated, I verified the variety and entered the correct variety in my notes. If it was not plated, I accepted the variety as cited.

For most of what follows, I chose to ignore the shortcomings in my data. I threw out 23 observations. For 12, there was no information other than they were Massachusetts coppers. Four were verified reappearances of the same coins in 2 or more sales. Eight were appearances of the counterfeit cents (1 appearance of the 1787 1-B, 1 of the 5-I, 5 of the 7-H (only 3 distinct coins), and 1 of the 1788 14-J). This left a working sample of 1039 coins.

First, I looked at the distribution of listed grades for the two denominations for each of the two years of mintage (shown in tab 1). While this distribution is not indicative of the grade structure for the existing population of Massachusetts coppers, it should give an idea of what is available in the nicer grades. I should note that I included coins with an unspecified grade in the VG and lower category. I should also note that if a coin was graded and problems were noted, I gave the coin the wear grade because it was generally impossible to tell from the written description what the net grade should be. It is obvious from tab 1 that half cents, in general, are more available in high grades (EF and higher) than cents. More than half the 1788 half cents offered for sale graded at least EF. In contrast, only 40 percent of the 1787 half cents and 20 percent of the cents graded this high.

Next, I wanted to know which varieties were scarce in high grades. I decided that if two or fewer examples of a variety grading EF or higher were offered at auction in my auction catalogues, I would call it scarce in high grade. Tab 2 shows the varieties my data set shows are scarce in high grade.

Tab 1. Percentage distribution of Massachusetts Coppers by year, denomination, and grade.

Year and Denomination	Total Reported	Percentages			
		VG and lower	F-VF	EF-AU	MS
1787 Half Cent	203	9	49	29	13
1788 Half Cent	91	13	36	37	14
1787 Cent	237	38	40	18	4
1788 Cent	508	33	47	17	3
Total	1039	28	45	21	6

More than a quarter (12) of the 45 varieties minted at the Massachusetts mint in Boston were not offered for sale in EF or higher grades. Another 10 were not offered in those grades more than twice. While many nice examples of Massachusetts coppers exist, they tend to be concentrated in a few of the more common varieties. Anyone who has tried to put together a variety set on Massachusetts coppers in choice Very Fine or better can tell you it is not a task that can be done in a day or even a decade.

Finally, I performed a "quantity analysis" where I estimated not only the number of cents and half cents minted each year, but the number minted for each variety. I first estimated the number of coins minted for each date/denomination combination using the survey distribution applied to the total value of Massachusetts coppers minted (\$3492.875). Tab 3 gives the survey distribution, the value distribution (half cents are worth only half as much as cents, you know), and the estimated number of each date/denomination minted, rounded to the nearest 500.

Tab 2. Massachusetts copper varieties that are scarce in high grade and the number reported in grades EF or higher.

Year, denomination and variety	Number Reported	Number EF-MS	Comments*
1787 Half Cent 4-D	1	0	
6-D	7	1	5 EF+ reported in my survey
1788 Half Cent 1-A	11	1	8 EF+ reported in my survey
1787 Cent 2a-F	6	0	
2b-C	9	2	3 EF+ reported in my survey
2b-E	11	2	
2b-G	0	0	
4-J	2	0	
6-G	11	2	
8-G	1	0	
1788 Cent 4-G	13	0	
9-M	4	1	
11-C	8	2	
11-F	12	2	3 EF+ reported in my survey
12-H	1	0	
12-I	11	2	
12-K	0	0	
12-O	1	0	
13-I	0	0	
13-N	15	2	
16-M	5	0	
17-I	1	0	

* In 1986 and 1987 I conducted a survey of Massachusetts copper holdings among Early American Copper club members. This column indicates those varieties reported as common in high grade in that survey.

Tab 3. Distribution of Massachusetts coppers.

Date and Denomination	Survey Distribution	Value Distribution	Estimated Mintage
1787 Half Cent	19 percent	11 percent	79,500
1787 Cent	23 percent	27 percent	93,000
1788 Half Cent	9 percent	5 percent	35,500
1788 Cent	49 percent	57 percent	199,000
Total			407,000

When Spilman performed his quantity analysis (CNL p. 1014), he took my rarity estimates and assumed a variety population equal to the upper end of the range for the rarity. For example, I estimate that the 1787 half cent variety 1-D is a rarity 5-. The range for a rarity 5- is 61 to 75 specimens known. Spilman assumed that there are 75 1-D 1787 half cents in existence. He summed across all the varieties for a particular denomination and date to obtain an estimate of

the total number of pieces in existence for that date and denomination. He then used those estimates to compute the following estimated mintages (which I have rounded to the nearest 500): 1787 half cents—65,000; 1787 cents—90,500; 1788 half cents—41,500; and, 1788 cents—205,500; for an estimated total mintage of 402,500 pieces. Our estimates of the number of cents minted are close—within 3 percent. My estimates of the number of half cents minted is about 15 percent higher than his because, based on auction appearances, I estimate a much higher mintage of 1787 half cents.

There are a number of possibilities for why our numbers might differ. First, my rarity estimates could be in error. If a couple of 1787 half cent varieties are less rare than I estimated, then Spilman would have underestimated the number of half cents minted and overestimated the number of cents minted. Second, a greater portion of 1787 half cent varieties are rare (R-5 or higher) by my rarity figures than either the 1787 or 1788 cent varieties. Hence, if relatively complete collections are auctioned, 1787 half cents will be overrepresented relative to their rarity and my estimation procedure will overestimate their existing population and minted population. Third, if Massachusetts half cents truly are more common in high grade than cents, they will be more attractive as auction material and will be auctioned with greater frequency than cents. This will also cause my estimates of the half cent population to be too large. Fourth, the frequency distribution of the Massachusetts coppers listed in the sales catalogues I own could differ from the true population distribution which will introduce a bias of unknown direction into my estimates.

On the whole, I believe my mintage estimates of the scarcer varieties to be biased upward. Because there is a greater portion of 1787 half cents that are scarce, I believe the mintage estimate for this group to be somewhat high. Nonetheless, I decided to take the quantity analysis to its logical conclusion by estimating, for each known variety, the number of pieces minted at the Massachusetts mint.

To estimate the number minted of each variety, I first distributed the unattributed cents or half cents of each date among the various varieties for that date/denomination. If there were no appearances of a variety in my records, I assumed that 1 of the unattributed coins was of that variety and then distributed the remainder of the unattributed coins amongst the remaining varieties according to the frequency distribution of the attributed coins. The only exception was for the cents of 1787. I found that the horned eagle variety (Ryder 2b-A) was often attributed even when no other Massachusetts coppers in a sale were attributed. I decided that distributing the unattributed 1787 cents according to the frequency distribution of the attributed pieces would result in too high an estimated mintage for the 2b-A's. I therefore arbitrarily assumed that ten percent of the unattributed 1787 cents were 2b-A's (as opposed to the forty percent they represented of the attributed pieces), and distributed the remaining unattributed 1787 cents amongst the remaining varieties.

After distributing the unattributed coins among the various varieties, I applied the resulting frequency distribution to my estimated mintage figures for each date and denomination to estimate the mintage for each variety. These mintage estimates, rounded to the nearest 500 coins, are shown in tab 4. I should note that for the cents of 1788, I estimated the mintage for the Perkins varieties and Callender varieties separately. We know from mint records that Perkins' contract specified that he would receive one percent of the coins struck from his dies. We also know that Perkins received \$13.14 for his work. This implies \$1,314 in Massachusetts copper coins were struck from Perkins' dies. Subtracting the estimated value of half cents struck from Perkins' dies (\$177.50) from the above amount gives an estimate of the number of cents struck from his dies (113,650). It follows that an estimated 85,350 1788 cents were struck from Callender dies.

To date my best estimates of the number of pieces minted for each of the Massachusetts copper varieties are those shown in tab 4. I want to stress that these estimates are very rough. My data set is not very appropriate for this type of analysis. The estimates are based on a

nonrandom sample of today's Massachusetts copper population. The nature of the sample is that scarcer varieties will be overrepresented which will lead to an overestimate of their mintage. I believe this is especially a problem with the 2a-F and 4-J cents of 1787. To a lesser degree it is probably a problem with the 4-B, 6-A, and 6-D half cents of 1787 and the 1-A half cent of 1788. A number of the more common varieties of both denominations probably had a higher mintage than I have indicated.

Tab 4. Estimated number of coins minted for each variety of Massachusetts copper.

1787 Half Cents		1787 Cents		1788 Half Cents		1788 Cents	
Variety	Est. Mintage	Variety	Est. Mintage	Variety	Est. Mintage	Variety	Est. Mintage
1-D	9,500	2a-F	3,000	1-A	5,500	1-D	27,000
2-A	8,000	2b-A	32,500	1-B	30,000	2-B	13,000
3-A	3,000	2b-C	5,000			3-A	15,000
4-B	6,500	2b-E	5,500			3-E	8,500
4-C	26,000	2b-G	500			4-G	7,500
4-D	500	3-G	24,500			6-N	13,500
5-A	20,500	4-C	4,500			7-M	10,000
6-A	2,500	4-D	10,500			8-C	15,500
6-D	3,000	4-J	1,000			9-M	2,000
		6-G	5,000			10-L	29,000
		8-G	500			11-C	4,500
						11-E	15,000
						11-F	7,000
						12-H	500
						12-I	6,000
						12-K	500
						12-M	8,500
						12-O	500
						13-I	500
						13-N	7,500
						15-M	4,000
						16-M	2,500
						17-I	500
Total *	79,500		93,000		35,500		199,000

* Totals may not equal sum of components due to rounding.

To complete this analysis, I compared the rarity ratings based on the above analysis with my previously published rarity ratings (tab 5). To get rarities based on mintage estimates, I applied my rarity scale to one percent of the estimates. That is, I assumed that one percent of my estimates of the mintage for each Massachusetts variety are currently known and correctly attributed. It does not matter if the survival rate of Massachusetts coppers is three percent with one-third correctly attributed, or ten percent with one-tenth correctly attributed. If one assumes that one percent of the mintage estimates for Massachusetts coppers are currently attributed, then one can make rarity estimates based on this assumption.

Tab 5. Massachusetts copper rarity ratings based on mintage estimates and my published rarity ratings.

<u>Variety</u>	<u>Rarity based on Estimated Mintage</u>	<u>Published Rarity</u>	<u>Variety</u>	<u>Rarity based on Estimated Mintage</u>	<u>Published Rarity</u>
<u>1787 Half Cents</u>			<u>1788 Half Cents</u>		
1-D	4+	5-	1-A	5	6
2-A	4+	5	1-B	3	3
3-A	6-	5+			
4-B	5-	6-			
4-C	3+	3	<u>1788 Cents</u>		
4-D	7+	7+	1-D	3	3
5-A	3+	4	2-B	4	4-
6-A	6-	6	3-A	4	5
6-D	6-	6	3-E	4+	3+
			4-G	5-	5+
<u>1787 Cents</u>					
2a-F	6-	6+	6-N	4	3
2b-A	3	3	7-M	4+	5
2b-C	5	5	8-C	4	3+
2b-E	5	5	9-M	6	6+
2b-G	7+	7+ *	10-L	3	3
3-G	3+	3	11-C	5+	5
4-C	5+	5	11-E	4	4+
4-D	4	4	11-F	5-	5
4-J	7-	7+ *	12-H	7+	8
6-G	5	4	12-I	5	4
8-G	7+	7	12-K	7+	6+
			12-M	4+	3
			12-O	7+	8
			13-I	7+	8
			13-N	5-	4-
			15-M	5+	5
			16-M	6-	6
			17-I	7+	7

* Revised from R-8.

As one can see from tab 5, none of the rarity ratings based on estimated mintages, except that for the 1788 12-M cent, deviated from my published ratings by more than one full point on the rarity scale. Most of the varieties I list as R-5 or rarer had a more common (numerically lower) rarity rating. Of the rare varieties with a higher rarity rating based on my mintage estimates, only the 1788 12-K cent was at least a full point rarer. Of the varieties I list as R-4 or more common, only the 1787 5-A half cent had a lower rarity rating using my mintage estimates. Given the nature of the sample on which this analysis is based, these "biases" are in the expected directions.

I do **not** feel compelled to revise my rarity ratings based on the results of my mintage estimates. I feel that the right hand column of rarity estimates for each variety are the most accurate currently available. They are, of course, subject to revision as new information comes to light.

Summary

In this short paper, I have attempted to do three things—determine which auction catalogues offered significant collections of Massachusetts coppers for sale, determine which Massachusetts copper varieties are scarce in high grade, and calculate an estimate of the mintage of each variety of Massachusetts cent and half cent.

Certainly the three most important sales of Massachusetts coppers in my collection are Bowers and Merena's "Norweb" and "Taylor" sales and NASCA's "Kessler-Spangenberg". Because my catalogue holdings are pretty well limited to two auction houses, it is very possible that there have been other significant sales of Massachusetts coppers. I would appreciate being informed of these.

My conclusions as to which varieties are very scarce in EF or higher grades are these: Among the half cents, only the 1787 Ryder 4-D is scarce in EF or higher, but it is almost impossible to find in any condition so any specimen one finds is a keeper; among the 1787 cents, the 2a-F, 2b-G, 4-J, and 8-G are unknown to me in EF or better and the 2b-E and 6-G are very scarce in those grades; and among the 1788 cents, the 4-G, 12-H, 12-K, 12-O, 13-I, 16-M, and 17-I are unknown to me in EF or higher grades while the 9-M and 11-C are very scarce in high grades. As I obtain more information, I will probably delete several of these varieties from the "scarce in high grade category".

The Massachusetts Archives contains a record of the value of the total mint production of the Massachusetts copper mint. As far as I am aware, there are no records of the value of output from the mint for either 1787 or 1788 nor are there records of how many cents or half cents were minted for either year. The only partial clue we have is the payment for die cutting given to Jacob Perkins. He received \$13.14 (3 L, 18s, 10d) as his one percent share of the coins struck from his dies. But even here, we do not know what portion were 1788 cents and what portion 1788 half cents. Given the absence of any "official" mintage figures by variety, I feel it is appropriate to attempt an estimate.

My estimates of mintage figures given in tabs 3 and 4 above are only estimates and are estimates that I believe are somewhat biased. I have not made an attempt to correct the bias which I believe overestimates the mintage of the scarcer varieties and underestimates the mintage of the more common varieties. One critical assumption I have made which may well not hold is that every variety has had the same survival rate. If this assumption is not valid, my estimates may be entirely off base.

Let me close with a request for information from CNL Foundation members. I have been keeping a survey of Massachusetts coppers for the past several years. If you have not sent me a listing of your Massachusetts copper holdings, please do so. All information will be held in the strictest confidence unless you give me permission to release some or all of it. If anyone of you has information on Massachusetts coppers, the mint or minting operations, or on the principals of the mint (Joshua Witherle the mint master, Joseph Callender and Jacob Perkins the diecutters, or Ebenezer Hancock the inspector of the mint and probably John Hancock's brother) that has not been published in either the *Colonial Newsletter* or Crosby's *The Early Coins of America*, I would appreciate it if you would pass that information on to me.

